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NEWS 45  Jun 25  HSDB has been reloaded

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              MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),
              AND CURRENT DISCOVER FILE IS DATED 01 APRIL 2003
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=> s shellac and coating and carbon(w)dioxide
            96 SHELLAC
          5494 COATING
          8464 CARBON
          5734 DIOXIDE
          3713 CARBON(W)DIOXIDE
L1           0 SHELLAC AND COATING AND CARBON(W)DIOXIDE

=> s shellac and coating and super(w)critical
            96 SHELLAC
          5494 COATING
           674 SUPER
          4989 CRITICAL
            18 SUPER(W)CRITICAL
L2           0 SHELLAC AND COATING AND SUPER(W)CRITICAL

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=> s shellac and coating and carbon(w)dioxide
          4668 SHELLAC
        626766 COATING
        991200 CARBON
        386242 DIOXIDE
        176339 CARBON(W)DIOXIDE
L3          19 SHELLAC AND COATING AND CARBON(W)DIOXIDE

=> s shellac and coating and super(w)critical
          4668 SHELLAC
        626766 COATING
         49765 SUPER
         78356 CRITICAL
           243 SUPER(W)CRITICAL
L4            0 SHELLAC AND COATING AND SUPER(W)CRITICAL

=> d l3 cbib ab 1-19
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L3 ANSWER 1 OF 19 CAPLUS COPYRIGHT 2003 ACS

2002:294131 Document No. 136:315022 **Coating** foods and pharmaceuticals with an edible polymer using **carbon dioxide**. Ziegler, Gregory R.; Wysk, Richard A.; Frank, Matthew C. (USA). U.S. Pat. Appl. Publ. US 2002045004 A1 20020418, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-941794 20010830. PRIORITY: US 2000-PV228966 20000830.

AB A sprayable liq. **coating** compn., particularly for application to foodstuffs and pharmaceuticals, utilizes gaseous CO2 to reduce the viscosity of a concd. soln. comprising an edible polymer and a solvent, such as EtOH or iso-PrOH. The addn. of the gaseous CO2 in the concd. soln. permits a sprayable compn. to be produced using a significantly reduced level of solvent in the edible polymer/solvent soln. By reducing the amt. of solvent used in the soln., the level of VOCs emission during the **coating** process also is reduced. Either supercrit. CO2 or subcrit. **carbon dioxide** can be used as the gaseous **carbon dioxide** in the present invention. A concd. soln. of 50.0 mL dewaxed, bleached **shellac** and 100% EtOH was prepd. at 50% **Shellac** and 50% EtOH. (by wt.). The concd. **shellac** /EtOH soln. was placed in a high-pressure vessel that was maintained in an insulated box at 50.degree.. Liq. CO2 was drawn from a siphon-fed tank and through a first heat exchanger. The CO2 was chilled to 0.degree. via a heat exchanger to maintain the CO2 in a liq. state, a phys. requirement of the pump. The compressed CO2 then was heated through a second heat exchanger to 50.degree. and directed, as a supercrit. fluid, to the high-pressure vessel. The supercrit. fluid and concd. soln. were mixed for 30.0 s after the introduction of the supercrit. CO2 to form a liq.

spray **coating** compn. The resulting liq. spray **coating** compn. was released through an atomizing nozzle onto substrate targets. Test observations revealed a sampling of spray droplets sufficiently small for a typical **coating** application.

L3 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2003 ACS
2002:1726 Document No. 137:46315 The flavor of mandarin hybrids with different coatings. Hagenmaier, R. D. (USDA/ARS/SAA, US Citrus and Subtropical Products Laboratory, Winter Haven, FL, 33881, USA). Postharvest Biology and Technology, 24(1), 79-87 (English) 2002. CODEN: PBTEED. ISSN: 0925-5214. Publisher: Elsevier Science Ireland Ltd..
AB Mandarin hybrids were treated with wax and resin coatings having differing oxygen permeabilities. After storage for 7 days at 21.degree., fruit with coatings having O2 permeability .ltoreq.1.1.times.10-16 mol m s-1 m-2 Pa-1 were rated by a sensory panel as markedly less fresh than fruit with higher permeability coatings. These low-permeability coatings were those composed mainly of **shellac** and wood resin. The flavor changed most for fruit having mean internal O2<4%, internal CO2>14% at 21.degree. and juice ethanol content >1500 ppm after 7 days storage at that temp. All coatings seemed suitable for storage of specialty citrus fruit for 7 days at 5.degree.. It is recommended that for mandarin hybrids, the most suitable are those composed mainly of waxes rather than **shellac** or wood resin.

L3 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2003 ACS
2000:672294 Document No. 134:197977 The effect of supercritical **carbon dioxide** on polymeric **coating** materials frequently used by the pharmaceutical industry. Gajan, V.; Benoit, J. P.; Thies, C. (School of Medicine, University of Angers, Angers, 49045, Fr.). Proceedings of the International Symposium on Controlled Release of Bioactive Materials, 27th, 728-729 (English) 2000. CODEN: PCRMEY. ISSN: 1022-0178. Publisher: Controlled Release Society, Inc..
AB A range of film-forming materials is insol. in supercrit. CO2 at 80-225 bars/35-70.degree., but their phys. properties are affected.

L3 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2003 ACS
2000:572684 Document No. 133:362058 Candelilla-**shellac**. An alternative formulation for **coating** apples. Alleyne, Victorine; Hagenmaier, Robert D. (U. S. Department of Agriculture, Agricultural Research Service, Citrus and Subtropical Products Laboratory, Winter Haven, FL, 33881, USA). HortScience, 35(4), 691-693 (English) 2000. CODEN: HJHSAR. ISSN: 0018-5345. Publisher: American Society for Horticultural Science.
AB An exptl. candelilla-**shellac** formulation for **coating** apples (Malus .times. domestica Borkh.) was developed and compared with com. **shellac**-based and carnauba-**shellac**-based coatings on "Gala" and "Delicious" apples by detg. effects on quality attributes, respiration, and internal atmospheres. Fruit were stored at 5.degree. for 7 days followed by storage at 21.degree. for 14 days. Gloss of "Delicious" apples coated with candelilla-**shellac** formulations contg. 7% to 34% **shellac** increased with increasing **shellac** concns. "Gala" and "Delicious" apples coated with a candelilla formulation contg. 34% **shellac** maintained quality similar to those coated with com. carnauba-**shellac**-based coatings, as indicated by gloss, firmness, internal CO2, O2 and EtOH levels, steady-state respiration rate, wt. loss, and flavor. By comparison, **shellac**-coated fruit maintained the highest gloss throughout the exptl. period. **Shellac**-coated apples were also firmer, contained more EtOH, and received higher flavor scores than did apples receiving other **coating** treatments. Gloss of all coated fruit decreased with time, although **shellac**-coated fruit lost less gloss over the 21-day storage period. Anal. of gloss, firmness, fruit respiration, EtOH, wt. loss, and flavor demonstrate that the candelilla formulation contg. 34% **shellac** is competitive with

current com. carnauba-based apple-**coating** products.

L3 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2003 ACS
2000:531892 Document No. 133:104204 Candy containing CO2 and its manufacturing method. Yun, Sung-hong (Jeoung Woo Confectionery Co., Ltd., S. Korea). Repub. Korea KR 9504568 B1 19950502, No pp. given (Korean). CODEN: KRXXFC. APPLICATION: KR 1992-4905 19920326.
AB Chocolate coated candy contg. CO2 gas is prepd. by **coating** the surface of candy contg. CO2 gas with edible oil, e.g. coconut oil, then chocolate and syrup, and polishing by **coating** with wax and **shellac** soln. at 17-20 ppm, 17-23.degree.C and .ltoreq.50% humidity.

L3 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2003 ACS
1999:762641 Document No. 132:236089 The potential of fruit **coating** and film treatments for improving the storage and shelf-life qualities of 'Gala' and 'Golden Delicious' apples. Saftner, Robert A. (Horticultural Crops Quality Laboratory, U.S. Department of Agriculture, Beltsville, MD, 20705, USA). Journal of the American Society for Horticultural Science, 124(6), 682-689 (English) 1999. CODEN: JOSHB5. ISSN: 0003-1062. Publisher: American Society for Horticultural Science.
AB The effects of harvest-applied **coating** and shrink-wrap polymeric film treatments of apples [Malus .times.domestica Borkh. 'Gala' and Mansf. 'Golden Delicious'] on volatile levels, quality attributes, respiration, and internal atmospheres after storage at 0 .degree.C for 1 to 6 mo, and during subsequent shelf life at 20 .degree.C were investigated. Over 30 volatiles were detected, most of the identified volatiles were esters, the rest were alcs., aldehydes, a ketone and a sesquiterpene. **Shellac** - and wax-based fruit coatings transiently inhibited total volatile levels in 'Golden Delicious' while not affecting those in 'Gala' apples during 6 mo of storage in air at 0 .degree.C. Holding fruit at 20 .degree.C for up to three weeks following cold storage increased volatile levels with coated and nontreated fruit having similar amts. Only **shellac** -coated 'Golden Delicious' apples accumulated ethanol and Et acetate when held at 20 .degree.C. The shrink-wrap polymeric film treatment had no effect on fruit volatile levels during cold storage or during subsequent shelf life at 20 .degree.C. **Coating** but not film treatments reduced respiration and ethylene prodn. rates that were obsd. upon transferring the fruit to 20 .degree.C. Internal CO2 and ethylene levels increased and O2 levels decreased in coated fruit. The **coating** treatments led to better retention of flesh firmness in 'Golden Delicious' but not 'Gala' apples. **Coating** and film treatments reduced fresh wt. loss in both cultivars during cold storage. The results suggest that harvest-applied **coating** and film treatments having relatively high permeability for CO2 and O2 and relatively low permeability for water vapor and fruit volatiles have potential for improving the storage and shelf-life qualities of 'Gala' and 'Golden Delicious' apples.

L3 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2003 ACS
1999:592739 Document No. 132:136623 Postharvest calcium infiltration alone and combined with surface **coating** treatments influence volatile levels, respiration, ethylene production, and internal atmospheres of "Golden Delicious" apples. Saftner, Robert A.; Conway, William S.; Sams, Carl E. (Agricultural Research Service, Horticultural Crops Quality Laboratory, Beltsville Agricultural Research Center, U.S. Department of Agriculture, Beltsville, MD, 20705, USA). Journal of the American Society for Horticultural Science, 124(5), 553-558 (English) 1999. CODEN: JOSHB5. ISSN: 0003-1062. Publisher: American Society for Horticultural Science.
AB Effects of postharvest pressure infiltration of distd. water or CaCl2 solns. at 0.14 or 0.27 mol.cntdot.L-1 without and with subsequent fruit **coating** treatments of preclimacteric "Golden Delicious" [Malus sylvestris (L.) Mill. var. domestica (Borkh.) Mansf. "Golden Delicious"] apples on volatile levels, respiration, ethylene prodn., and internal

atmospheres after storage at 0.degree. for 1 to 6 mo, and during subsequent shelf life at 20.degree. were investigated. Over 30 volatiles were detected, most of the identified volatiles were esters; the rest were alcs., aldehydes, ethers, a ketone, and a sesquiterpene. Pressure infiltration of water and increasing concns. of CaCl2 resulted progressively in reduced total volatile levels, respiration, ethylene prodn., and internal O2 levels and increased CO2 levels in fruit following 2 to 4 mo storage in air at 0.degree.. Total volatile levels, respiration, ethylene prodn., and internal atmospheres of apples treated with CaCl2 at 0.14 mol.cntdot.L-1 gradually recovered to untreated control levels following 2 wk of shelf life at 20.degree. and/or storage at 0.degree. in air for more than 4 mo. Following the calcium treatments with a **shellac**- or wax-based **coating** had similar but stronger and more persistent effects on volatile levels, respiration, ethylene prodn., and internal atmospheres than those found in fruit treated with CaCl2 alone. Calcium infiltration did not change the compn. of volatile compds. found in fruit. Results suggest that pressure infiltration of "Golden Delicious" apples with CaCl2 solns. transiently inhibited volatile levels, respiration, and ethylene prodn., in part, by forming a more-or-less transient barrier to CO2 and O2 exchange between the fruit tissue and the surrounding atm.

L3 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2003 ACS

1998:579729 Document No. 130:124129 The influence of applied waxes on postharvest physiological behavior and pitting of grapefruit. Petracek, Peter D.; Dou, Huating; Pao, Steven (Florida Department of Citrus, Citrus Research and Education Center, Lake Alfred, FL, 33850, USA). Postharvest Biology and Technology, 14(1), 99-106 (English) 1998. CODEN: PBTEED. ISSN: 0925-5214. Publisher: Elsevier Science Ireland Ltd..

AB The role of wax application on the development of a postharvest pitting of white grapefruit (Citrus paradisi 'Macf.') was examd. Pitting developed on fruit coated with **shellac**-based waxes from three sources and, to a much lesser extent, on fruit coated with carnauba- or polyethylene-based wax. Non-waxed fruit did not pit. Pitting decreased with internal O2 level and increased with internal CO2 level. Reducing wax coverage of the fruit surface by .gtoreq.0.9% or by puncturing the peel increased O2 levels, decreased ethanol and acetaldehyde levels and reduced pitting. Subjecting fruit to low O2 (4%) alone induced pitting, but high CO2 (8%) had no effect. These results suggest that stimulation of postharvest pitting of grapefruit is caused in part by the redn. of internal O2 levels.

L3 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2003 ACS

1998:483884 Document No. 129:275051 Selection of a surface **coating** and optimization of its concentration for use on "Hass" avocado (Persea americana Mill.) fruit. Johnston, Jason W.; Banks, Nigel H. (Centre for Postharvest and Refrigeration Research and Department of Plant Science, Massey University, Palmerston North, N. Z.). New Zealand Journal of Crop and Horticultural Science, 26(2), 143-151 (English) 1998. CODEN: NZJSEF. ISSN: 0114-0671. Publisher: SIR Publishing.

AB Effects of surface coatings on gas exchange characteristics of "Hass" avocados (Persea americana) were used to select a suitable **coating** and to optimize its concn. for use on avocado fruit at 20.degree.C, 60% relative humidity. Of six different surface coatings used, "Avocado wax" provided the greatest level of benefit (redn. in mass loss and enhanced sheen) for a given level of risk (modification of internal oxygen and **carbon dioxide** partial pressures). At the other extreme, 2% CM-cellulose provided no benefit but substantially increased risk of fermn. "Apple clear" treated fruit had lowest rates of mass loss, but had poor visual quality. Of the Avocado wax concns. assessed, 11% was the optimum. Concns. greater than this provided marginal further gains in the redn. of mass loss, but imposed unacceptable levels of risk of anaerobiosis in the fruit. A packhouse trial confirmed this concn. as optimum, but achieved somewhat lower levels of benefit.

L3 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2003 ACS

1996:128649 Document No. 124:174093 Permeability of Different Wax Coatings and Their Effect on Citrus Fruit Quality. Mannheim, Chaim H.; Soffer, Tal (Department of Food Engineering and Biotechnology, Technion-Israel Institute of Technology, Haifa, 32000, Israel). Journal of Agricultural and Food Chemistry, 44(3), 919-23 (English) 1996. CODEN: JAFCAU. ISSN: 0021-8561. Publisher: American Chemical Society.

AB Gas and water vapor permeability (WVTR) characteristics of seven coatings (Britex 505, PacRite-StorRite 101, PacRite-SunShine, Primafresh 30, Decco Lustr 202, Natural Zivdar, Industrial Zivdar) used com. for citrus were detd. by **coating** these on highly permeable films. Oranges and mandarins were coated with the same seven coatings, and wt. loss, appearance, internal gas compn., presence of ethanol and acetaldehyde, and flavor of these fruits were detd. There was a relationship between low concns. of oxygen, which lead to off-flavors, and the presence of ethanol and acetaldehyde in the fruit. There was also a relationship between WVTR and wt. loss of the fruit with most coatings, but no correlation between CO2 and O2 permeability of the coatings and concn. of these gases in the fruit. The above findings were validated in a semi-industrial trial.

L3 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2003 ACS

1995:771365 Document No. 123:226489 Effect of Coatings and Prolonged Storage Conditions on Fresh Orange Flavor Volatiles, Degrees Brix, and Ascorbic Acid Levels. [Erratum to document cited in CA122:289343]. Baldwin, Elizabeth A.; Nisperos-Carriedo, Myrna; Shaw, Philip E.; Burns, Jacqueline K. (Citrus and Subtropical Products Laboratory, Agricultural Research Service, Winter Haven, FL, 33881, USA). Journal of Agricultural and Food Chemistry, 43(8), 2316 (English) 1995. CODEN: JAFCAU. ISSN: 0021-8561. Publisher: American Chemical Society.

AB The errors were not reflected in the abstr. or the index entries.

L3 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2003 ACS

1995:553636 Document No. 122:289343 Effect of Coatings and Prolonged Storage Conditions on Fresh Orange Flavor Volatiles, Degrees Brix, and Ascorbic Acid Levels. Baldwin, Elizabeth A.; Nisperos-Carriedo, Myrna; Shaw, Philip E.; Burns, Jacqueline K. (Citrus and Subtropical Products Laboratory, Agricultural Research Service, Winter Haven, FL, 33881, USA). Journal of Agricultural and Food Chemistry, 43(5), 1321-31 (English) 1995. CODEN: JAFCAU. ISSN: 0021-8561. Publisher: American Chemical Society.

AB Valencia oranges were treated with a com. polysaccharide-based **coating** or a com. **shellac**-based water wax or were left uncoated. The fruit were then stored at 16 or 21 .degree.C with 95% relative humidity for up to 56 days. Samples were periodically analyzed for internal gases, flavor volatiles, water loss, .degree.Brix, and ascorbic acid. Coated fruit had lower internal O2 and higher CO2 and ethylene concns. than uncoated. **Shellac**-coated fruit had the lowest and highest amts. of O2 and CO2, resp., at 21 .degree.C. Generally, coated fruit showed higher concns. of many volatile compds. as time in storage increased, most notably ethanol, Et butanoate, Et acetate, and .alpha.-pinene. This was esp. true for **shellac**-coated fruit, for coated fruit at the higher storage temp., and after the second month of storage. In contrast, levels of valencene, .alpha.-terpineol, and hexanol were generally lower in **shellac**-coated fruit and all coated fruit at the higher storage temp. Several hydrocarbon and minor alc. volatiles increased then decreased during the storage period. Some exceptions were .alpha.-pinene, sabinene, and isobutanol which generally increased in coated fruit by the end of the storage period. **Shellac**-coated fruit had significantly less wt. loss than fruit subjected to all other treatments, whereas polysaccharide-treated fruit did not retard water loss compared to uncoated fruit. No significant differences were found for .degree.Brix or ascorbic acid concns.

L3 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2003 ACS

1994:242933 Document No. 120:242933 Wax Microemulsions and Emulsions as Citrus Coatings. Hagenmaier, Robert D.; Baker, Robert A. (Citrus and Subtropical Products Laboratory, U.S. Department of Agriculture, Winter Haven, FL, 33883-1909, USA). Journal of Agricultural and Food Chemistry, 42(4), 899-902 (English) 1994. CODEN: JAFCAU. ISSN: 0021-8561.

AB Citrus fruit was coated with polyethylene wax, petroleum wax, synthetic petroleum wax, carnauba wax, and candelilla wax emulsified with fatty acids and other FDA-permitted ingredients. Wt. losses were low with coatings that contained hydrocarbon wax and for those waxes emulsified with stearic or palmitic rather than oleic acid. Oranges coated with wax had less wt. loss, lower internal CO2, higher internal O2, and better water resistance than fruit coated with **shellac** or resin. Coatings formed on polymer films had proportionally higher resistance to water vapor when made with wax microemulsions rather than with mixts. of wax with **shellac** or wood resin.

L3 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2003 ACS

1993:123310 Document No. 118:123310 Reduction in gas exchange of citrus fruit by wax coatings. Hagenmaier, Robert D.; Baker, Robert A. (Citrus Subtrop. Prod. Lab., Agric. Res. Serv., Winter Haven, FL, 33883-1909, USA). Journal of Agricultural and Food Chemistry, 41(2), 283-7 (English) 1993. CODEN: JAFCAU. ISSN: 0021-8561.

AB Grapefruits and oranges were coated with various fruit waxes. Compared to controls, internal CO2 concns. were markedly higher and wt. loss markedly lower for coated fruit. Resistance of coated fruit to passage of CO2 and water vapor was shown to be influenced by permeability of the **coating** but more so to the degree to which the **coating** seals openings in the fruit epidermis. For restriction of CO2 exchange the **coating** thickness and surface tension of the liq. **coating** were of less importance than was the type of wax. Crit. surface tension of grapefruit and orange peel, after washing, was 23 dyn/cm. **Shellac** coatings adversely affected fruit flavor.

L3 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2003 ACS

1992:254218 Document No. 116:254218 Gas permeability of fruit **coating** waxes. Hagenmaier, Robert D.; Shaw, Philip E. (Citrus Subtrop. Prod. Lab., Agric. Res. Serv., Winter Haven, FL, 33883, USA). Journal of the American Society for Horticultural Science, 117(1), 105-9 (English) 1992. CODEN: JOSHB5. ISSN: 0003-1062.

AB The permeability to O2, CO2, C2H4, and water vapor was detd. for 19 com. fruit wax coatings, 4 ingredients thereof, and 1 shrink-wrap film. For the com. coatings, the O2 permeability at 50% relative humidity and 30.degree. was 470-22,000 mL (STP) .times. mil/(m2 .times. day .times. atm) (1 mil = 0.0254 mm) with CO2 permeability 2-8-fold that. Permeability to noncondensable gases tended to be higher for coatings made from carnauba wax than for those made from **shellac** and rosin. Com. fruit wax had sufficiently low noncondensable gas permeability to account for large redns. in the respiration rate of coated fruit. Wax coatings could be improved if permeability were controlled.

L3 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2003 ACS

1992:46137 Document No. 116:46137 A new multiple-unit oral floating dosage system. I: Preparation and in vitro evaluation of floating and sustained-release characteristics. Ichikawa, Masaki; Watanabe, Sumio; Miyake, Yasuo (Pharm. Res. Lab., Eisai Co., Ltd., Tsukuba, 300-26, Japan). Journal of Pharmaceutical Sciences, 80(11), 1062-6 (English) 1991. CODEN: JPMSAE. ISSN: 0022-3549.

AB A multiple-unit type of oral floating dosage system, (a new type of floating pills which generate **carbon dioxide** gas) has been prepd. in order to prolong the gastric emptying time of the prepn. The floating ability and the sustained-release characteristics of the system have been elucidated in vitro. The system was composed of sustained-release pills as seeds and double layers on the sustained-release pills. The inner layer was an effervescent layer contg.

both sodium bicarbonate and tartaric acid. The outer layer was a swellable membrane layer contg. mainly polyvinyl acetate and purified **shellac**. When the system was immersed in water, it formed swollen pills, like balloons, with a d. much lower than 1.0 g/mL. The reaction was due to **carbon dioxide** gas generated by neutralization in the effervescent layer with the diffusion of water through the swellable membrane layer. The system was floating completely within .apprx.10 min and .apprx.80% remained floating over a period of 5 h irresp. of pH and viscosity of the test medium. While the system was floating, a drug (p-aminobenzoic acid) was released. The release rate of the drug from the system was zero order and depended on the sustained-release characteristics of the sustained-release seeds composing the system. The release rate was not affected by the amt. of the swellable membrane layer up to 13% (wt./wt.).

L3 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2003 ACS

1991:227602 Document No. 114:227602 Permeability of **shellac** coatings to gases and water vapor. Hagenmaier, Robert D.; Shaw, Philip E. (Citrus Subtrop. Prod. Lab., Winter Haven, FL, 33883-1909, USA). Journal of Agricultural and Food Chemistry, 39(5), 825-9 (English) 1991. CODEN: JAFCAU. ISSN: 0021-8561.

AB **Shellac** is a major component of "waxes" used to coat fruits, but there is little information on its gas permeability. **Shellac** was coated onto highly permeable polymer films and its permeability calcd. from measured values of permeance for coated and uncoated films. At 75% relative humidity and 30.degree., the O and CO2 permeabilities were 230 and 803 mL mil/(m2 day atm), resp., for **shellac** coatings cast from EtOH. Over a wide range of relative humidities, the water vapor permeability was 0.9-2.1 g mil/(m2 day mm Hg) for **shellac** coatings cast from iso-PrOH. Coatings made from water-sol. **shellac** were more permeable, esp. at high relative humidity. The barrier properties of **shellac** are compared with those of various polymers.

L3 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2003 ACS

1955:74939 Document No. 49:74939 Original Reference No. 49:14224a-b Effect of skin coatings on the behavior of apples in storage. Hall, E. G.; Sykes, S. M. (Dept. Agr., Sidney, Australia). Modern Refrigeration, 58, 14 (Unavailable) 1955. CODEN: MREFAG. ISSN: 0369-1705.

AB Effects of coatings on scald and internal defects vary with the **coating** material. Thus a castor-oil **coating** often controls scalds and does not cause internal disorder or off-flavors. On the other hand, **shellac** coatings may induce scald and also affect internal disorders and flavor. Relations of **coating** to O2 and CO2 interchange in the apple and of gas interchange to scald and internal disorder are pointed out.

L3 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2003 ACS

1953:52639 Document No. 47:52639 Original Reference No. 47:8924a-c Effects of skin coatings on the behavior of apples in storage. I. Physiological and general investigations. Trout, S. A.; Hall, E. G.; Sykes, S. M. (Food Preservation Research Lab., Homebush). Australian Journal of Agricultural Research, 4, 57-81 (Unavailable) 1953. CODEN: AJAEA9. ISSN: 0004-9409.

AB Skin coatings consisting of mixts. of various oils and waxes, with or without **shellac**, were applied to apples by dipping in alc. solns. or aq. emulsions (cf. C.A. 36, 4617.4). The coatings increased the resistance of the skin to gaseous diffusion and thus greatly reduced the internal O concn., increased the internal CO2 concn., reduced the respiration rate, and retarded ripening changes, such as yellowing of the skin. The magnitude of the effects depended greatly on storage temp., thickness and type of **coating**, and variety and condition of the fruit. Heavy coatings and high storage temps. produced very low O concns. within the fruit and induced anaerobic respiration, which led to accumulation of EtOH and AcH and finally to alc. poisoning of the tissues.